WHAT IS CLAIMED IS:

1. An abnormal respiration detecting system comprising:

a sensing means for sensing a signal indicative of a physical sign;

a signal detecting means for detecting a signal outputted from the sensing means;

a respiratory condition determining means for determining a respiratory condition based on the signal; and

an abnormal respiration detecting means for detecting abnormal respiration based on the determined respiratory condition.

2. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a sphygmographic signal; and

the respiratory condition determining means calculates a pulse rate and an amplitude of a pulse wave from the sphygmographic signal.

3. The abnormal respiration detecting system according to claim 2, wherein the respiratory condition determining means calculates a ratio between the pulse rate and the amplitude of the pulse wave.

4. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a sphygmographic signal;

the respiratory condition determining means calculates a respiratory curve from the sphygmographic signal and a respiration rate from the respiratory curve; and

the abnormal respiration detecting means detects the abnormal respiration based on a variation in the respiration rate.

5. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a sphygmographic signal;

the respiratory condition determining means calculates a respiratory curve from the sphygmographic signal and determines whether apnea is present based on the respiratory curve; and

the abnormal respiration detecting means detects the abnormal respiration based on the determination of apnea.

6. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a sphygmographic signal;

the respiratory condition determining means calculates a respiratory curve from the sphygmographic signal and determines whether apnea is present based on the respiratory curve;

the respiratory condition determining means determines an apneic period when apnea is present; and

the abnormal respiration detecting means detects abnormal

respiration based on the apneic period.

7. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a sphygmographic signal;

the respiratory condition determining means calculates a respiratory curve from the sphygmographic signal and determines whether apnea is present based on the respiratory curve;

the abnormal respiration detecting means detects abnormal respiration based on a continuous variation of apnea when apnea is present.

8. The abnormal respiration detecting system according to claim 2, wherein the abnormal respiration detecting means detects abnormal respiration based on a variation in the pulse rate.

9. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means senses a signal indicative of an oxygen saturation level in blood;

the respiratory condition determination means calculates an oxygen saturation level in blood from the signal;

the abnormal respiration detecting means detects abnormal respiration based on a variation in the oxygen saturation level in blood.

10. The abnormal respiration detecting system according to claim 1, further comprising:

an abnormal respiration rating means for rating the abnormal respiration based on seriousness of abnormal respiration;

a rating storing means for storing the rating of the abnormal respiration; and

an overall abnormal respiration rating means for rating an overall abnormal respiration to determine whether a warning is necessary;

a warning means for producing a warning when the overall abnormal respiration is determined that a warning is necessary, wherein

the respiratory condition determining means determines a plurality of respiratory conditions,

the abnormal respiration detecting means detects abnormal respiration based on each respiratory condition,

the abnormal respiration rating means rates each abnormal respiration, and

the overall abnormal respiration rating means rates an overall abnormal respiration based on the rating of each abnormal respiration.

11. The abnormal respiration detecting system according to claim 1, wherein:

the sensing means is an optical pulse wave sensor having

one of blue and green light emitting devise;

the signal detecting means detects a sphygmographic signal inputted from the optical pulse wave sensor; and

the abnormal respiration detecting means detects abnormal respiration based on the sphygmographic signal.

12. The abnormal respiration detecting system according to claim 11, wherein:

the pulse wave sensor includes a light emitting device that emits light toward a subject of the abnormal respiration detection and a photoreceptor device that receives light emitted from the light emitting device and reflected off the subject; and

the light emitting device has emitting wavelength characteristics that shows two peaks, a first peak corresponding to a peak of an absorptive wavelength characteristic curve of hemoglobin and a second peak corresponding to a peak of a sensitivity characteristic curve of the photoreceptor device.

13. The abnormal respiration detecting system according to claim 11, wherein:

the first peak is about 440nm; and

the second peak is about 550nm.

14. The abnormal respiration detecting system according to claim 9, the sensing means is an optical pulse oximeter having

at least one of a red light emitting device and a near-infrared light emitting device.

15. An abnormal respiration detecting program for executing at least one of means claimed in claim 1.

16. A storing media for storing the program claimed in claim 15 and data outputted during an execution of the program.

17. A sensing device comprising:

an optical pulse wave sensor having one of a blue light emitting device and a green light emitting device for detecting a pulse wave; and

an optical pulse oximeter having a red light emitting device.

18. The sensing device according to claim 17, wherein the pulse wave sensor including:

a light emitting device that emits light toward a subject of the abnormal respiration detection; and

a photoreceptor device that receives light emitted from the light emitting device and reflected off the subject, wherein

the light emitting device has emitting wavelength characteristics that shows two peaks, a first peak corresponding to a peak of an absorptive wavelength characteristic curve of hemoglobin and a second peak

corresponding to a peak of a sensitivity characteristic curve of the photoreceptor device.

19. The sensing device according to claim 17, wherein:

the first peak is about 440nm; and

the second peak is about 550nm.

20. The sensing device according to claim 17, wherein the optical pulse wave sensor and the optical pulse oximeter are integrally constructed.

21. A method for detecting abnormal respiration comprising:

sensing a signal indicative of a physical sign by a sensing means;

detecting a signal outputted from the sensing means;

determining a respiratory condition based on the detected signal; and

detecting abnormal respiration based on the determined respiratory condition.

22. The method according to claim 21, wherein:

the signal outputted from the sensing means is a sphygmographic signal; and

the respiratory condition determining step further comprises calculating a pulse rate and an amplitude of the pulse wave from the sphygmographic signal.

23. The method according to claim 22, wherein the respiratory condition determining step further comprises calculating a ratio between the pulse rate and the amplitude.

24. The method according to claim 21, wherein:

the signal outputted from the sensing means is a sphygmographic signal;

the respiratory condition determining step further comprises calculating a respiratory curve from the sphygmographic signal and a respiration rate from the respiratory curve; and

the abnormal respiration is detected based on a variation in the respiration rate.

25. The method according to claim 21, wherein:

the signal outputted from the sensing means is a sphygmographic signal;

the respiratory condition determining step further comprises calculating a respiratory curve from the sphygmographic signal; and

the determining step further comprises determining whether apnea is present based on the respiratory curve.

26. The method according to claim 25, wherein:

the signal outputted from the sensing means is a sphygmographic signal;

the respiratory condition determining step further

comprises calculating a respiratory curve from the sphygmographic signal; and

the determining step further comprises calculating an apneic period in which the apnea continues from the respiratory curve.

27. The method according to claim 25, wherein:

the signal outputted from the sensing means is a sphygmographic signal;

the respiratory condition determining step further comprises calculating a respiratory curve from the sphygmographic signal; and

the abnormal respiration is detected based on a continuous variation of apnea.

28. The method according to claim 21, wherein:

the signal outputted from the sensing means is a sphygmographic signal;

the respiratory condition determining step further comprises calculating a pulse rate from the sphygmographic signal; and

the abnormal respiration is detected based on a variation in pulse rate.

29. The method according to claim 21, wherein:

the signal outputted from the sensing means is a signal indicative of an oxygen saturation level in blood;

the respiratory condition determining step further comprises calculating an oxygen saturation level in blood from the signal;

the abnormal respiration is detected based on a variation in the oxygen saturation level in blood.

30. The method according to claim 21, further comprising:

rating the abnormal respiration based on seriousness of abnormal respiration;

storing the rating of the abnormal respiration; and

rating an overall abnormal respiration to determine whether a warning is necessary, wherein

the respiratory condition determining step determines a plurality of respiratory conditions,

the abnormal respiration detecting step detects abnormal respiration based on each respiratory condition,

the abnormal respiration rating step rates each abnormal respiration, and

the overall abnormal respiration rating step rates an overall abnormal respiration based on the rating of each abnormal respiration.